

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A graphite-containing heat-resistant cast iron comprising ~~3.5-5.6% of Si and 1.2-15% of W on a weight basis~~, and having intermediate layers, in which W and Si are concentrated, in the boundaries of graphite particles and a matrix, wherein said graphite-containing heat-resistant cast iron comprises 3.5-5.6% of Si and 1.2-15% of W on a weight basis, and wherein a ratio (X_i/X_m) of a weight ratio X_i of W in said intermediate layers to a weight ratio X_m of W in said matrix is 5 or more and a ratio (Y_i/Y_m) of a weight ratio Y_i of Si in said intermediate layers to a weight ratio Y_m of Si in said matrix is 1.5 or more, said heat-resistant cast iron having a composition comprising, on a weight basis, 1.5-4.5% of C, 3.5-5.6% of Si, 3% or less of Mn, 1.2-15% of W, less than 0.5% of Ni, 0.3% or less of Cr, and 1.0% or less of a graphite-spheroidizing element, the balance being substantially Fe and inevitable impurities, said graphite-spheroidizing element comprising 0.003-0.02% by weight of S and 0.05% or less by weight of a rare earth element in addition to 0.005-0.2% by weight of Mg as a graphite-spheroidizing element.

2-6. (canceled).

7. (currently amended): The heat-resistant cast iron according to claim 1, wherein the heat resistant cast iron meets $Si + (2/7) W \leq 8$ on a weight basis.

8. (previously presented): The heat-resistant cast iron according to claim 1, further comprising 5.5% or less by weight of Mo.
9. (previously presented): The heat-resistant cast iron according to claim 1, further comprising 6.5% or less by weight of Cu.
10. (previously presented): The heat-resistant cast iron according to claim 1, further comprising 5% or less by weight of Co.
11. (previously presented): The heat-resistant cast iron according to claim 1, further comprising 1.0% or less by weight of Nb and/or 0.05% or less by weight of B.
12. (previously presented): The heat-resistant cast iron according to claim 1, wherein the number of graphite particles having W-containing carbide particles in the boundaries with said matrix is 75% or more of the total number of graphite particles.
13. (currently amended): The heat-resistant cast iron according to claim 1, wherein with respect to W-containing carbide particles on the surface of graphite particles exposed by etching, their number is $3 \times 10^5/\text{mm}^2$ or more ~~per a unit area of graphite~~, and/or their area ratio is 1.8% or more, per a unit area of graphite.

14. (currently amended): The heat-resistant cast iron according to claim 1, wherein ~~its~~ an A_{CI} transformation point of the heat resistant cast iron is 840°C or higher when measured from 30°C at a temperature-elevating speed of $3^{\circ}\text{C}/\text{minute}$.

15. (currently amended): The heat-resistant cast iron according to , wherein ~~its~~ a weight loss by oxidation of the heat resistant cast iron is $60\text{ mg}/\text{cm}^2$ or less when kept at 800°C for 200 hours in the air.

16. (currently amended): The heat-resistant cast iron according to claim 1, wherein ~~its~~ a thermal cracking life of the heat resistant cast iron is 780 cycles or more in a thermal fatigue test, in which heating and cooling are conducted under the conditions of an upper-limit temperature of 840°C , a temperature amplitude of 690°C and a constraint ratio of 0.25.

17. (previously presented): An exhaust equipment member made of the heat-resistant cast iron recited in claim 1.

18. (currently amended): The exhaust equipment member according to claim 17, wherein ~~it~~ the exhaust equipment member is an exhaust manifold, a turbocharger housing, an exhaust manifold integral with a turbocharger housing, a catalyst case, an exhaust manifold integral with a catalyst case, or an exhaust outlet.

19. (currently amended): ~~An~~ The exhaust equipment member used at temperatures exceeding 800°C, which is formed by a graphite-containing heat-resistant cast iron having a ~~composition comprising, on a weight basis, 1.5-4.5% of C, 3.5-5.6% of Si, 3% or less of Mn, 1.2-15% of W, less than 0.5% of Ni, 0.3% or less of Cr, and 1.0% or less of a graphite-spheroidizing element, $Si + (2/7) W \leq 8$, and the balance being substantially Fe and inevitable impurities, of claim 1, wherein Si and W meet the condition of $Si + (2/7) W \leq 8$ on a weight basis,~~ said heat-resistant cast iron having a structure comprising a matrix based on a ferrite phase in an as-cast state, in which graphite is crystallized, and intermediate layers, in which W and Si are concentrated, in the boundaries of said graphite particles and said matrix, whereby ~~it~~ the exhaust equipment member has an A_{C1} transformation point of 840°C or higher when measured from 30°C at a temperature-elevating speed of 3°C/minute, and a thermal cracking life of 780 cycles or more in a thermal fatigue test, in which heating and cooling are conducted under the conditions of an upper-limit temperature of 840°C, a temperature amplitude of 690°C and a constraint ratio of 0.25.

20. (canceled).

21. (currently amended): The exhaust equipment member according to claim 2019, wherein said X_i/X_m is 10 or more.

22. (canceled).

23. (currently amended): The exhaust equipment member according to claim ~~22~~19, wherein said Y_i/Y_m is 2.0 or more.

24. (currently amended): The exhaust equipment member according to claim 19, wherein ~~its~~ a weight loss by oxidation of the exhaust equipment member is 60 mg/cm^2 or less when kept at 800°C for 200 hours in the air.

25. (previously presented): The exhaust equipment member according to claim 19, wherein said heat-resistant cast iron has a composition comprising, on a weight basis, 1.8-4.2% of C, 3.8-5.3% of Si, 1.5% or less of Mn, 1.5-10% of W, 0.3% or less of Ni, 0.3% or less of Cr, and 0.01-0.2% of a graphite-spheroidizing element, $\text{Si} + (2/7) \text{W} \leq 8$, and the balance being substantially Fe and inevitable impurities.